Cordless Kitchen Appliances
2400 Watts wireless power in your kitchen

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a small kitchen...
Sue has a small kitchen. In stead of a stove, she has hidden transmitters.

She uses a cordless rice cooker and food processor and still has enough room.
Sue uses a smart wok and smart sauce pan to prepare the meal.
Finally, Sue uses a cordless kettle to prepare tea.

Note that the cordless appliances are cleaned in the sink.
The Kitchen Work Group

- Based on an initiative by Haier and Philips

- Charter:
  - The Kitchen Work Group will develop specifications of an interface between cordless kitchen appliances and inductive power sources for powering these appliances.
  - The desired features of these specifications are described in the agreed commercial requirements (updated June 2015)
Some examples of early cordless kitchen appliances. Rather than a conventional wall power socket, these appliances need an inductive power source to be powered.

**Wattage**: up to 1.5 or 2.4 kW!
Inductive power sources (transmitters) may be stand alone or integrated in the kitchen counter tops or dining tables.

Transmitters could combine the Wireless Power transfer to an appliance with conventional Inductive Heating.
Inductive Power Transfer (IPT)

Power may be transferred with induction using a primary coil (in the transmitter) and a secondary coil (in the appliance). This is the same as Qi.

Induction Heating (IH)

Power (heat) may be transferred directly into the metal base of an appliance by induction heating. This method may be cheaper and more efficient for cordless heating appliances such as kettles and smart pans.
Why do we need a standard?

1. Avoid brand lock in
   - Consumers can buy whatever appliance brand they like
   - Kitchen installer can choose from multiple suppliers

2. Consumers want interoperability
   - Appliances can be moved around in the kitchen or in the house.
   - Appliances still work when moved to another house
   - A logo will indicate interoperability

3. Create a market for inductive power sources and components
   - Consumers will profit from the economies of scale
What Benefits will it bring to consumers?
Convenient & Clean

- Tidy counter top, tidy kitchen: looks great!
- Kitchen countertop easy to clean.

• Appliances are easy to clean
  → Appliances may be sealed and could be rinsed or put in the dishwasher!
Space efficient

No need for a space consuming stove in a small kitchens

 Appliances are easy to store
Smart features

- Integrates a high speed, short range advanced communication channel
- Place the appliance and automatically:
  1. Appliance is powered
  2. Advanced communication is started
- Enable smart features such as:
  - Exact control of cooking times
  - Exact temperature control
  - Recipe download and programming
  - Control on appliance, cooktop, tabletop or smart phone/tablet
Functional models

Fulton Innovation (2009)
Functional models

Haier (2013)
Functional models

Haier (2013)
commercial
Functional models

Philips (2014)
LG (2015)
Functional models

Philips (2015)
Functional models

Philips (2016)
Haier (2017)
2\textsuperscript{nd} generation
Functional models

Philips (2017)
With smart features